Monday, 21.05.2012

08:30 - 09:15 Room Brüssel - Welcome Session - Chair: Ralf Moos

09:15 - 10:00 Room Brüssel - Plenary Session - Chair: Giorgio Sberveglieri
Tessi Shigemori (President of New Cosmos Co., JP) - Gas sensors - status and future trends for safety applications

10:00 - 10:30 Coffee

Room Mailand — High Temperature Gas Sensors I — Chair: Prabir Dutta

10:30
1.1.1 Invited
Sensors for Fossil Energy Applications in Harsh Environments

Robert R. Romanosky, NETL National Energy Technology Laboratory, Morgantown, USA

11:00
1.1.2
Preliminary study on catalytic combustion-type sensor for diesel particulate matter detection

Y. Teraoka, Kyushu University, Fukuoka, Japan

11:20
1.1.3
Al-doped TiO_2 semiconductor gas sensor for NO_2-detection at elevated temperatures

B. Saruhan-Brings, German Aerospace Center, Cologne, Germany

11:40
1.1.4
SiC-based MIS gas sensor for CO detection in very high water vapor environments

O. Casals Guillen, University of Barcelona, Barcelona, Spain

12:00
1.1.5
Detection of coke deposits on a fixed-bed catalyst by a contactless microwave method: first measurements

D. Rauch, University of Bayreuth, Bayreuth, Germany

Room München 1 — Biosensors I — Chair: Hiroaki Shinohara

10:30
1.2.1
Urea biosensor using NH_3 nitrided amine groups on flexible substrate

Y.-T. Lin, Chang Gung University, Taoyuan, Taiwan

10:50
1.2.2
New stochastic sensors for biomedical applications

R.-I. Stefan-van Staden, National Institute of Research for Electrochemistry and Condensed Matter, Bucharest, Romania

11:10
1.2.3 Invited
Nanomaterials-based Biosensors

Arben Merkoçi, Institut Català de Nanotecnologia, Bellaterra (Barcelona), Spain

11:40
1.2.4
Gas-assisted focused ion beam fabrication of gold nanoelectrode arrays in electron-beam evaporated alumina films for biosensing applications

N. Triroi, Brown University, Providence, USA

12:00
1.2.5
Optimization of Spirulina biofilm for in-situ heavy metals detection with microfluidic-acoustic sensor and AFM

N. Tekaya, Université de Bordeaux, Talence, France

Room Brüssel — Metal Oxide-based Gas Sensors I — Chair: Stephane Evoy

10:30
1.3.1
Suppression of the NO_2 interference by chromium addition in WO_3-based ammonia sensors. Investigation of the sensing pathways and their relationship with the structural properties

M. Epifani, Consiglio Nazionale delle Ricerche–Istituto per la Microeletronica ed I Microsistemi (CNR-IMM), Lecce, Italy

10:50
1.3.2
Oxygen deficient V_2O_5 nanorods for gas sensing

Z. Zhang, Tsinghua University, Beijing, China

11:10
1.3.3
A bio-inspired structure: conversing CdS to CdO for gas-sensing detection of acetone and diethyl ether

J. Liu, University of Science and Technology of China, Hefei, China

11:30
1.3.4
Flammable gas sensing of flame-spray-made metal-loaded semiconducting metal oxides thick films

S. Phanichphant, Chiang Mai University, Chiang Mai, Thailand

11:50
1.3.5
Conduction mechanism in undoped and antimony doped SnO_2 based FSP gas sensors

J. Rebholz, Tübingen University, Tübingen, Germany

12:10
1.3.6
Alcohol sensing properties of rare earth doped In_2O_3 hollow spheres

T. Zhang, Beijing University of Chemical Technology, Beijing, China

Room München 2 — Sensor Arrays — Chair: Julian W. Gardner

10:30
1.4.1
Systematic methods for exploiting temperature-dependent phenomena in chemiresistive sensing

S. Semancik, National Institute of Standards and Technology, Gaithersburg, USA

10:50
1.4.2
Development of a quartz crystal microbalance sensor array for discrimination of black tea

P. Sharma, Jadavpur University, Kolkata, India

11:10
1.4.3
The EMD based IMF analysis of gas sensor dynamic signals

G. Wei, Shandong Institute of Business and Technology, Yantai, China

11:30
1.4.4
Analysis of industrial and domestic gases by means of electronic nose

D. Haridas, University of Delhi, New Delhi, India

11:50
1.4.5
Electronic Nose: different metal oxide modified well-aligned ZnO nanowire arrays for highly sensitive and selective gas detection

W. Zhou, University of New Orleans, New Orleans, USA

12:10
1.4.6
Microsensors for Mars trace analyte detection in a simulated Martian environment

K. Benkstein, National Institute of Standards and Technology, Gaithersburg, USA

Room Athen — Transistor-based Sensors — Chair: Anita Lloyd-Spetz

10:30
1.5.1
Quantitative evaluation of nanoelectrochemical properties of thin film transistor based chemical sensors

G. Whitfield, MIT, Department of Materials Science and Engineering, Cambridge, USA

10:50
1.5.2
Sensing with dual-gated silicon nanowire field-effect transistors

M. Wipf, University of Basel, Basel, Switzerland

11:10
1.5.3
Environmental hardness of Pt-Ti-O gate Si-MISFET hydrogen gas sensors from siloxane, humidity, and radiation

T. Usagawa, Central Research Laboratory, Hitachi, Ltd., Japan

11:30
1.5.4
Influence of a changing gate bias on the sensing properties of SiC field effect gas sensors

C. Bur, Saarland University, Saarbrücken, Germany

11:50
1.5.5
Room temperature benzene gas detection using gated lateral BJT with assembled solvatochromic dye

H. Yuan, Kyungpook National University, Daegu, Korea

12:10
1.5.6
Construction of a photovoltaic glucose sensor applying a metal-insulator-silicon structure in combination with ultrathin polypyrrole-glucose oxidase film

J. Wang, Zhejiang University, Hangzhou, China

12:30 - 13:30 Lunch

Monday, 21.05.2012

Room Mailand High Temperature Gas Sensors II Chair: Holger Fritze	Room München 1 Biosensors II (DNA, SPR) Chair: Arben Merkoçi	Room Brüssel Metal Oxide-based Gas Sensors II Chair: Yasuhiro Shimizu	Room München 2 Resonant Sensors I Chair: Roland Pohle	Room Athen IR and Raman-based Sensors Chair: Jürgen Wöllenstein
13:30 **2.1.1 Invited** **Developing Strategies for Improving Selectivity and Sensitivity of Harsh Environment Electrochemical Gas Sensors.** **Prabir Dutta, The Ohio State University, Columbus, USA**	**13:30** 2.2.1 DNA electrophoresis through micropores manufactured by laser ablation M.S. Perez, Grupo MEMS, Buenos Aires, Argentina	**13:30** 2.3.1 Xylene sensor using double-layered thin film and Ni-deposited porous alumina K. Hara, Tokyo Denki University, Tokyo, Japan	**13:30** 2.4.1 Mesoporous TiO_2 sensitive films for Love wave humidity detection: origins of stress release induced by sorption A. Tetelin, University of Bordeaux, Bordeaux, France	**13:30** 2.5.1 Towards quantitative Raman spectroscopy by tuning the sensitivity of nanopillar SERS substrates M. Stenbæk Schmidt, Technical University of Denmark, Kgs. Lyngby, Denmark
	13:50 2.2.2 Detection of DNA sequence based on proton reduction catalyzed by deposition of platinum-complexes T. Yasukawa, University of Hyogo, Hyogo, Japan	**13:50** 2.3.2 Photo-assisted aromatic VOC sensing by a p-NiO:Li/n-ZnO transparent heterojunction sensor element Y. Nakamura, The University of Tokyo, Tokyo, Japan	**13:50** 2.4.2 Single-particle mass detection with micro-/nanocantilevers based sensors I. Stachiv, Academia Sinica at Taipei, Taipei City, Taiwan	**13:50** 2.5.2 Characterization and application of innovative plasmonic arrays D. Cialla, Friedrich-Schiller-University Jena, Jena, Germany
14:00 2.1.2 Electrochemical hydrogen sensor for aluminum melts C. Schwandt, University of Cambridge, Cambridge, UK	**14:10** **2.2.3 Invited** **Novel cell-based biosensing with 2D-SPR imager** **Hiroaki Shinohara, University of Toyama, Toyama, Japan**	**14:10** 2.3.3 H_2 sensing properties of diode-type sensors fabricated with anodized TiO_2 films equipped with polymer coated Pd-Pt electrodes G. Yamamoto, Nagasaki University, Nagasaki, Japan	**14:10** 2.4.3 Structural factors influencing the volatile sensitivity of polymer-coated piezoelectric micromechanical resonators D. Karabacak, IMEC, Eindhoven, The Netherlands	**14:10** 2.5.3 Investigations on a MO_X gas sensor as an infrared source for an IR-based gas sensing system K. Kühn, Saarland University, Saarbrücken, Germany
14:20 2.1.3 Novel hydrogen probe for Al melt C. Park, KAIST, Daejon, Korea		**14:30** 2.3.4 Electrospun copper(II)oxide fibers as highly sensitive and selective sensor for hydrogen sulfide utilizing percolation effects J. Hennemann, University Giessen, Giessen, Germany	**14:30** 2.4.4 Quartz crystal microbalance sensor for organic vapor detection based on silica-based mesoporous organic-inorganic hybrids J. Xu, Shanghai University, Shanghai, China	**14:30** 2.5.4 Reliable online-prediction of characteristic process parameters by FTNIR spectroscopic analysis W. Summerer, RECENDT GmbH, Linz, Austria
14:40 **2.1.4 Invited** **Automotive Exhaust Gas Sensing - Current Trends** **Kathy Sahner, Robert Bosch GmbH, Stuttgart, Germany**	**14:40** 2.2.4 Graphene based fiber optic surface plasmon resonance for biochemical sensor applications J. A. Kim, Sungkyunkwan University, Suwon, Korea	**14:50** **2.3.5 Invited** **Large-Scale Integration of Nanomechanical Sensors** **Stephane Evoy, University of Alberta, Edmonton, Canada**	**14:50** 2.4.5 Silicon cantilever resonators integrated with portable electrostatic samplers for sensing and characterizing engineered nanoparticles in workplace air H. S. Wasisto, TU Braunschweig, Braunschweig, Germany	**14:50** 2.5.5 Microimmersion lens LEDs for portable photoacoustic methane sensors B. Matveev, Ioffe Institute, St. Petersburg, Russia
15:10 2.1.5 Gas sensor MEMS platform for harsh conditions N. Zaretskiy, NRC Kurchatov Institute, Moscow, Russia	**15:00** 2.2.5 Microarrayed 2D-SPR immunosensor for interleukin-2 M. Suzuki, University of Toyama, Toyama, Japan		**15:10** 2.4.6 Corrole-based nanostructures for sensing applications R. Paolesse, Università di Roma Tor Vergata, Roma, Italy	**15:10** 2.5.6 Photoacoustic methane detection using a novel DFB-type diode laser at 3.3 µm S. Rhein, Hamburg University of Applied Sciences, Hamburg, Germany
	15:20 2.2.6 Developing electrochemical impedance immunosensor for the detection of myoglobin in blood serum S. Mitra, University of Alberta, Edmonton, Canada			

15:30 - 16:00 Coffee

15:30 - 17:00 - Poster Session 1

Monday, 21.05.2012

Room Mailand Carbon Nano Tubes Chair: Marcel Bouvet	Room München 1 Biosensors III (cell based) Chair: Hossam Haick	Room Brüssel Metal Oxide-based Gas Sensors III Chair: Jong-Heun Lee	Room München 2 Sensor Systems Chair: Danick Briand	Room Athen ISFETs Chair: Zbigniew Brzozka
17:00 3.1.1 Micro-reactors and gas sensors based on locally heated carbon nanotubes decorated with Ti nanoparticles S. Moshkalev, Universidade de Campinas, Campinas, Brazil	**17:00** **3.2.1 Invited** **Designing an interface and cell for cellular biosensing** **Tetsuya Haruyama , Kyushu Institute of Technology, Kyushu, Japan**	**17:00** **3.3.1 Invited** **Ceria - Fundamentals and Applications in Different Fields of Gas Sensors** **Noriya Izu, National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Japan**	**17:00** 3.4.1 Intelligent chemical sensors and modern applications J. R. Stetter, KWJ Engineering Inc, Newark, USA	**17:00** 3.5.1 Selective ion sensors based on ionophore-modified graphene field-effect transistors K. Maehashi, Osaka University, Osaka, Japan
17:20 3.1.2 Chirality-selective fabrication of carbon nanotube gas sensor using spin-column chromatography and dielectrophoresis J. Suehiro, Kyushu University, Fukuoka, Japan	**17:30** 3.2.2 Toward functional engineered tissues as biosensors using hydrogels and dielectrophoretic technique J. Ramón-Azcón, Tohoku University, Sendai, Japan	**17:30** 3.3.2 Gas sensing properties of pulsed laser deposited vanadium oxide thin films J. Huotari, University of Oulu, Oulu, Finnland	**17:20** 3.4.2 New planar trace humidity sensor C. Tiebe, BAM Federal Institute for Materials Research and Testing, Berlin, Germany	**17:20** 3.5.2 Fluorinated-HfO_2 ISFET as pK sensor with highly sensitivity K. Ho, Chang Gung University, Taoyuan, Taiwan
17:40 **3.1.3 Invited** **Ultra-low power single-walled carbon nanotube fased chemical sensors** **Christofer Hierold, ETH-Zürich, Zürich, Switzerland**	**17:50** 3.2.3 Living cell-based gas sensor system for the detection of unexpected gaseous organic compounds in air M. Fleischer, Siemens Corporate Research and Technologies, Munich, Germany	**17:50** 3.3.3 Chemically synthesized one-dimensional zinc oxide nanorods for ethanol sensing W. Wlodarski, School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia	**17:40** 3.4.3 Disruptive MEMS technology replaces conventional bead pellistor device S. Trautweiler, e2v microsensors sa, Corcelles, Switzerland	**17:40** 3.5.3 High polarization HfO_2 sensing on K^+ for inflammasome cell detection application P.-W. Liao, Chang Gung University, Taoyuan, Taiwan
18:10 3.1.4 New electrochemical (bio)sensing strategies based on the use of dispersed carbon nanotubes G. A. Rivas, Universidad Nacional de Cordoba, Cordoba, Argentina	**18:10** 3.2.4 $[pH]_0$ imaging in proton releasing cells by an ion image sensor-based chemical microscopy T. Sakurai, Electronics Inspired Interdisciplinary Research Institute, Hamamatsu, Japan	**18:10** 3.3.4 Zeolite modified gas sensors for environmental monitoring R. Binions, University College London, London, UK	**18:00** 3.4.4 Miniature gas analysis system for volatile organic compounds U. Lehmann, Microsens SA, Neuchatel, Switzerland	**18:00** 3.5.4 Multiparametric microsensors on lab-on-chip systems for the detection of dissolved substances Y. Eminaga, Technische Universität München, Munich, Germany

Tuesday, 22.05.2012

08:30 - 09:15 Room Brüssel - Plenary Session - Chair: Udo Weimar
Krishna Persaud (The University of Manchester, Manchester, UK) - Reverse Engineering of Nature in the Field of Chemical Sensors

09:15 - 10:00 Room Brüssel - Plenary Session - Chair: Yoshihiko Sadaoka
Harry Tuller (Massachusetts Institute of Technology, MIT, Cambridge, USA) - Materials for High Temperature Electrochemical Applications

10:00 - 10:30 Coffee

Room Mailand
Electronic Potential-based Sensors
Chair: Gerhard Müller

10:30
4.1.1
Kelvin probe study of gas sensing properties of porphyrins-coated ZnO nanorods

C. Di Natale, University of Rome Tor Vergata, Roma, Italy

10:50
4.1.2
Metal-organic frameworks as an aldehyde sensing layer in work-function based gas sensing devices

P. Davydovskaya, Siemens Corporate Research and Technologies, Munich, Germany

11:10
4.1.3
Pt/Au based sensor with a PMMA film for detecting CO in a hydrogen-rich atmosphere

S. Simon, University of the Federal Armed Forces Germany, Munich, Germany

11:30
4.1.4
Work function analysis of gas sensitive WO_3 layers with Pt dopants

G. Halek, Wroclaw University of Technology, Wroclaw, Poland

11:50
4.1.5 Invited
Surface ionization detection of amine containing drugs in backgrounds of pharmaceuticals and extender material

Angelika Hackner, EADS Innovation Works, Munich, Germany

Room München 1
Biosensors IV (Systems)
Chair: Tetsuya Haruyama

10:30
4.2.1
Bisphenol A sensing device utilizing antibody modified beads on a microfluidic disk

I. Kubo, Soka University, Tokyo, Japan

10:50
4.2.2
In-check system: a highly integrated silicon lab-on-chip for sample preparation, PCR amplification and microarray detection towards the molecular diagnostics point-of-care

S. Petralia, ST Microelectronics, Catania, Italy

11:10
4.2.3
Mesoporous TiO_2 coating for increased sensitivity of Love wave delay-lines for heavy metal detection

I. Gammoudi, Université de Bordeaux, Talence, France

11:30
4.2.4
Piezoelectric olfactory receptor biosensor with aptamer-assisted immobilization technique

L. Du, Zhejiang University, Hangzhou, China

11:50
4.2.5
A MEMS based Fabry-Perot protein sensor with reference sensor

K. Takahashi, Toyohashi University of Technology, Toyohashi, Japan

12:10
4.2.6
Comparison of label-free ACh image sensors based on CCD and LAPS

C. Werner, FH Aachen, Aachen, Germany

Room Brüssel
Metal Oxide-based Gas Sensors IV
Chair: Noriya Izu

10:30
4.3.1
Growth of Cacti-like ZnO nanostructure from aqueous medium for gas sensor application

R. Pawar, Hanyang University, Ansan, South Korea

10:50
4.3.2
Assessment and modeling of NH_3-SnO_2 interactions using individual nanowire sensors

F. Hernandez-Ramirez, Catalonia Institute for Energy Research, Barcelona, Spain

11:10
4.3.3 Invited
Advances in nano-chemistry for chemical sensors

Sanjay Mathur, Universität Köln, Köln, Germany

11:40
4.3.4
Synthesis and gas sensing properties of hierarchical SnO_2 nanostructures

P. Sun, Jilin University, Changchun, China

12:00
4.3.5
One-pot hydrothermal synthesis of SnO and SnO_2 nanostructures enhanced H_2 sensing attributed to in-situ p-n junctions

S. Arun Kumar, CSIR Indian Institute of Chemical Technology, Andhra Pradesh, India

Room München 2
EU NetAir (Special Session) I
Chair: Giorgio Sberveglieri

10:30
4.4.1 Invited
Overview of the COST Action TD1105 EuNetAir

Michele Penza, ENEA, IT - Action Coordinator

10:50
4.4.2 Invited
Chemical NanoSensors and Microsystems for Air Pollution Detection

Juan Ramon Morante, Departament d'Electrònica, Universitat de Barcelona, Spain

11:10
4.4.3 Invited
Carbon Nanomaterials for Environmental Monitoring Sensors

Eduard Llobet Valero, Universitat Rovira i Virgili, Tarragona, Spain

11:30
4.4.4 Invited
SCR-catalyst materials for exhaust gas detection

Daniela Schoenauer-Kamin, University of Bayreuth, Bayreuth, Germany

11:50
4.4.5 Invited
Surface Ionization on Metal Oxide Gas Sensors

Andrea Ponzoni, SENSOR Lab. CNR-IDASC, Brescia, Italy

12:10
4.4.6 Invited
Microsystems-based Technologies for Air-Pollutant and Gas Detection

Danick Briand, EPFL, Lausanne, Switzerland

Room Athen
Wireless Sensing
Chair: Maximilian Fleischer

10:30
4.5.1 Invited
MHz and GHz wireless chem/bio sensors for environmental, industrial, and security applications

Radislav A. Potyrailo, GE Global Research, Niskayuna, New York, USA

11:00
4.5.2
Development of printed RFID sensor tags for smart food packaging

E. Smits, Holst Centre, Eindhoven, Netherlands

11:20
4.5.3
A novel design of antenna for biosensing applications

C.-W. Lin, National Taiwan University, Taipei, Taiwan

11:40
4.5.4
Contactless wide band near field microwave sensing techniques in microfluidic applications

T. Nacke, Institut für Bioprozess- und Analysenmesstechnik, Heilbad Heiligenstadt, Germany

12:00
4.5.5
Passive RFID sensors for monitoring of bacterial growth

R. A. Potyrailo, GE Global Research, Niskayuna, USA

12:30 - 13:30 Lunch

Tuesday, 22.05.2012

Room Mailand
Impedance-based Sensing
Chair: Martin Hämmerle

13:30
5.1.1
Detection of pathogenic Staphylococcus aureus bacteria by electrochemical impedance spectroscopy

M. Braiek, Claude Bernard University Lyon, Lyon, France

13:50
5.1.2
Poly(pyrrole-3-carboxylic acid) thin film based T-SPR immunosensor for detection of human IgG

J. Rapiphun, Chiang Mai University, Chiang Mai, Thailand

14:10
5.1.3
DNA electrodes for detection of sequence specific nucleic acid-ligand interaction

F.Lisdat, Wildau Technical University of Applied Sciences, Wildau, Germany

14:30
5.1.4
Impedance-based immobilized enzyme biosensor for detection of organophosphates

M. F. Smiechowski, Guild Associates, Dublin, USA

14:50
5.1.5 Invited
Multimodal gas detection by molecular materials

Marcel Bouvet, Université de Bourgogne, Dijon, France

Room München 1
Novel Sensing Principles
Chair: Alberto Lamagna

13:30
5.2.1
Development of highly selective interdigitated electrode (IDE) sensor array using molecular imprinted polymer (MIP) for detection of mango fruit ripeness

H. Hawari, University Malaysia Perlis, Arau, Malaysia

13:50
5.2.2
The influence of SO_2 and the thickness of the sensitive layer on the performance of the integrating NO_x sensor

A. Groß, University of Bayreuth, Bayreuth, Germany

14:10
5.2.3
Design and fabrication of a novel 3D micropellistor

T. Li, Chinese Academy of Sciences, Shanghai, China

14:30
5.2.4
Emissive exciplexes of surface-immobilized dibenzoylmethanatoboron difluoride with gaseous benzene, toluene and xylenes

V. Sazhnikov, Photochemistry Center of RAS, Moscow, Russia

14:50
5.2.5
Polymer optical fibers as gas sensors

M. Dorrestijn, Empa, St. Gallen, Switzerland

15:10
5.2.6
Au nanoparticle plasmon sensor for terpene detection

B. Chen, Graduate School of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan

Room Brüssel
Metal Oxide-based Gas Sensors V
Chair: Christophe Pijolat

13:30
5.3.1
High-precise transient response model of semiconductor gas sensor considering temperature dependency of carrier mobility

A. Fujimoto, Wakayama National College of Technology, Gobo-shi, Japan

13:50
5.3.2
WO_3 sensor for ppb detection of ammonia

J. Vetelino, University Of Maine, Orono, USA

14:10
5.3.3 Invited
Functional nanostructures for sensitive, selective and reliable gas sensors

Jong-Heun Lee, Korea University, Seoul, Korea

14:40
5.3.4
Influence of Pd and Pt doping concerning the sensing mechanism

K. Großmann, Institute of Physical Chemistry, Tuebingen, Germany

15:00
5.3.5
Material design for high-sensitive semiconducting gas sensors - preparation of Pd-loaded SnO_2 cluster sols

K. Shimanoe, Kyushu University, Fukuoka, Japan

Room München 2
Resonant Sensors II
Chair: Wojtek Wlodarski

13:30
5.4.1 Invited
Potentials of Capacitive Micromachined Ultrasonic Transducers (CMUT) and Film Bulk Acoustic Wave Resonators (FBAR) for Gas Sensing - an Industrial Point of View

Roland Pohle, Siemens AG, München, Germany

14:00
5.4.2
Quantification of benzene in ground water using SH-surface acoustic wave sensors

F. Josse, Marquette University, Milwaukee, USA

14:20
5.4.3
Study of odor preconcentrator using SAW device

Y. Yokoshiki, Tokyo Institute of Technology, Tokyo, Japan

14:40
5.4.4
Warfare gas detection at trace level using a multiple SAW sensor approach based on functionalised nanodiamond coatings

B. Tard, Cea List, Gif-sur-yvette cedex, France

15:00
5.4.5
A hydrogen sulfide sensor based on a surface acoustic wave resonator combined with ionic liquid

M. Hara, Tohoku University, Miyagi, Japan

Room Athen
Cation Conductor-based Gas Sensors
Chair: Norio Miura

13:30
5.5.1
Propofol analysis using a TiO_2 nanotube-based gas sensor and a solid electrolyte CO_2 sensor

T. Kida, Kyushu University, Fukuoka, Japan

13:50
5.5.2
Improvement of response/recovery behavior to CO_2 gas on solid electrolyte electrochemical gas sensor

H.-K. Lee, Electronics & Telecommunications Research Institutes (ETRI), Daejeon, Korea

14:10
5.5.3
Proton conduction in electrolyte made of manganese dioxide for hydrogen gas sensor

H. Koyanaka, Kyoto University, Kyoto, Japan

14:30
5.5.4
Progress in solid electrochemical gas sensors based on NASICON and oxide electrodes

G. Lu, Jilin University, Changchun, China

14:50
5.5.5
Highly water durable NH_3 gas sensor based on Al^{3+} ion conducting solid electrolyte with NH^{4+}-gallate

S. Tamura, Osaka University, Suita Osaka, Japan

15:10
5.5.6
Stacked type potentiometric solid-state CO_2 gas sensor for miniaturization

N.-J. Choi, Electronics and Telecommunications Research Institute, Daejeon, Korea

15:30 - 16:00 Coffee

15:30 - 17:00 - Poster Session 2

18:30 - 19:30 - Official Reception at the Nürnberg Town Hall

20:00 - 23:00 - Conference Dinner

Wednesday, 23.05.2012

Room Mailand FET- and MIP-based Sensors Chair: Jacobus van Staden	Room München 1 Flexible Substrate Sensors Chair: Radislav A. Potyrailo	Room Brüssel Metal Oxide-based Gas Sensors VI Chair: Eduard Llobet Valero	Room München 2 Sensors for Explosives Chair: Steve Semancik	Room Athen YSZ-based Sensors Chair: Chong-Ook Park
08:30 **6.1.1 Invited** **Biomimetic sensors using 'gate effect' of molecularly imprinted polyme** **Yasuo Yoshimi, Shibaura Institute of Technology, Tokyo, Japan**	**08:30** 6.2.1 Printed capacitive transducers on flexible plastic substrates with increased stability: the role of the passivation procedures Ulrike Altenberend, University of Tübingen, Tübingen, Germany	**08:30** **6.3.1 Invited** **Metal oxide sensors for petroleum industry** **Qurashi Ahsan-Ul-Haq, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia**	**08:30** 6.4.1 Trace explosive vapor detection using silicon nanowires in a vertical array with a porous electrode Ch. Field, Naval Research Laboratory, Washington DC, USA	**08:30** 6.5.1 Sensitive and selective detection of hydrogen using YSZ-based sensor with Zn-Ta-based oxide sensing electrode S. Anggraini, Kyushu University, Fukuoka, Japan
	08:50 6.2.2 Flexible sensors for an indoor air quality sensor system H.-E. Endres, Fraunhofer EMFT, Munich, Germany		**08:50** 6.4.2 A particle sampler for trace detection of explosives S. Beer, EADS Innovation Works, Munich, Germany	**08:50** 6.5.2 Gas selectivity improvement of YSZ-based VOC sensor via application of selective catalytic layer over sensing-electrode T. Sato, Kyushu University, Fukuoka, Japan
09:00 6.1.2 Artificial odor map and cluster sensing by MIP adsorbents M. Imahashi, Kyushu University, Fukuoka, Japan		**09:00** 6.3.2 Innovative VOC-CO_2-sensor-system for indoor air quality monitoring O. Kiesewetter, UST Umweltsensortechnik GmbH, Geschwenda, Germany		
	09:10 6.2.3 Flexible gas sensor array with an embedded heater based on metal decorated carbon nanofibres S. Claramunt, Universitat de Barcelona, Barcelona, Spain		**09:10** 6.4.3 Selection of a sensitive material for the detection of explosive, application to the detection of traces of TNT M. Bouhadid, CEA Le Ripault, Monts, France	**09:10** **6.5.3 Invited** **Recent developments in materials for potentiometric sensors** **Jens Zosel, Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Ziegra-Knobelsdorf, Germany**
09:20 6.1.3 Fragment-modified graphene FET for highly sensitive detection of antigen-antibody reaction S. Okamoto, Osaka University, Osaka, Japan		**09:20** 6.3.3 Hydrogen sensor using thin film with interspace T. Yamada, Tokyo Denki University, Tokyo, Japan		
	09:30 6.2.4 Influence of flexible substrate materials on the performance of polymer composite gas sensors Th. Kinkeldei, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland		**09:30** 6.4.4 Development of a gas micro-preconcentrator for the analysis of explosive traces: study and characterization of various adsorbing materials Y. Mohsen, Université de Franche Comté, Besançon, France	
09:40 6.1.4 Redox potential sensor array by extended-gate FET with ferrocenyl-alkanethiol modified gold electrode H. Anan, Nagoya University, Nagoya, Japan		**09:40** 6.3.4 Noble metal added tin oxide VOC sensors as nonanal detection for exhaled breath air monitoring T. Itoh, National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Japan		**09:40** 6.5.4 VOC sensing devices with a planar-type structure based on YSZ and modified Pt electrode Y. Sadaoka, Graduate School of Science and Engineering, Ehime, Japan

10:00 - 10:30 Coffee

Wednesday, 23.05.2012

Room Mailand Chemical Sensors for Medial Application Chair: Yasuo Yoshimi	Room München 1 Electrochemical Sensors I Chair: Agata Michalska	Room Brüssel Metal Oxide-based Gas Sensors VII Chair: Inkyu Park	Room München 2 EU NetAir (Special Session) II Chair: Michele Penza	Room Athen Chemical Sensors Using Optical Technologies Chair: Susan Rose-Pehrsson
10:30 **7.1.1 Invited** **Chemical Nanoarrays for Early Detection and Screening of Lung Cancer via Volatile Biomarkers** **Hossam Haick, Technion-Israel Institute of Technology, Haifa, Israel**	**10:30** 7.2.1 Influence of sintering temperatures on the performance of ZnO-doped RuO_2 sensing electrode of electrochemical DO Sensor S. Zhuiykov, CSIRO - Commonwealth Scientific Industrial Research Organisation, Highett, Australia	**10:30** 7.3.1 Operando spectroscopic study of the EtOH gas sensing mechanism of In_2O_3 S. Sänze, Technische Universität Darmstadt, Darmstadt, Germany	**10:30** 7.4.1 Invited Chemical Sensors for Indoor Applications Andreas Schütze, Universität des Saarlandes, Saarbrücken, Germany	**10:30** 7.5.1 a-Cyclodextrin functionalized planar Bragg grating sensor for the detection of small arene traces in solvent vapour M. Girschikofsky, University of Applied Sciences Aschaffenburg, Aschaffenburg, Germany
	10:50 7.2.2 A novel flexible chemical imaging set-up of amorphous Si-based light-addressable potentiometric sensor by video projector A. Das, Chang Gung University, Taoyuan, Taiwan	**10:50** 7.3.2 Probing the surface chemistry of single nanowire sensor in operando mode A. Komakov, Southern Illinois University, Carbondale, USA	**10:50** 7.4.2 Invited Chemical sensor systems for emission control from combustions Anita Lloyd Spetz, Linkoping University, Linköping, Sweden	**10:50** 7.5.2 PDA-based multifunctional microfluidic sensor system R. A. Potyrailo, GE Global Research, Niskayuna, USA
11:00 7.1.2 A novel tool for biochemical diagnostics of rare genetic disorders: an integrated microfluidic system with optical detection Z. Brzozka, Warsaw University of Technology, Warsaw, Poland	**11:10** 7.2.3 Glass based redox sensor W. Vonau, Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Ziegra-Knobelsdorf, Germany	**11:10** **7.3.3 Invited** **Fundamentals of metal oxide gas sensors** **Nicolae Barsan, Universität Tübingen,Tübingen, Germany**	**11:10** 7.4.3 Invited Low Power Sensor Systems Technologies for Environmental Air-Monitoring Sywert Brongersma, IMEC-Holst Centre, Eindhoven, Netherlands	**11:10** 7.5.3 pH sensor based on tilted fiber Bragg gratings covered by a sol-gel M. Debliquy, University of Mons, Mons, Belgium
11:20 7.1.3 Breath acetone monitoring by portable Si:WO_3 gas sensors M. Righettoni, Department of Mechanical and Process Engineering ETH Zurich, Zurich, Switzerland	**11:30** 7.2.4 Amperometric Dot-sensors based on zinc porphyrins for the determination of sildenafil citrate J. F. van Staden, National Institute of Research for Electrochemistry and Condensed Matter, Bucharest, Romania		**11:30** 7.4.4 Invited Electrochemical Sensors for Environmental Monitoring in Cities Rod Jones, University of Cambridge, Cambridge, UK	**11:30** 7.5.4 Flexible optical chemical sensor platform for BTX J. D. Arias Espinoza, Holst Centre/TNO, Eindhoven, Netherlands
11:40 7.1.4 Monitoring breath carbon monoxide gas using micro thermoelectric sensor W. Shin, AIST, Nagoya, Japan	**11:50** 7.2.5 High-speed chemical imaging system based on front-side illuminated LAPS A. Itabashi, Tohoku University, Sendai, Japan	**11:40** 7.3.4 Thin-film gas sensors operating in a perpendicular current mode Y. Ishikawa, Tokyo Denki University, Tokyo, Japan	**11:50** 7.4.5 Invited Wireless Chemical Sensor Networks for Air quality monitoring Saverio De Vito, ENEA Centro Ricerche Portici, Portici, Naples, Italy	**11:50** **7.5.5 Invited** **Optical fiber spectroscopy for food quality and safety applications** **Anna Grazia Mignani, Istituto di Fisica Applicata, Sesto Fiorentino, Italy**
12:00 7.1.5 Analysis of exhaled breath during surgery J. Langejuergen, Leibniz University Hannover, Hannover, Germany	**12:10** 7.2.6 IrO_x and Pt-Ir electrochemical sensors: prospective sensors for pH and glucose continuous monitoring in cell culture Y.-Y. Fang, National Taiwan University, Hsinchu County, Taiwan	**12:00** 7.3.5 Proposal of contact potential promoted oxide semiconductor gas sensors N. Yamazoe, Kyushu University, Fukuoka, Japan	**12:10** 7.4.6 Invited New Approaches to Chemical Sensing for Application in Environmental Monitoring: Smart Sensors and Artificial Olfactory Mucosa Julian W. Gardner, University of Warwick, Coventry, UK	

12:30 - 13:30 Lunch

Wednesday, 23.05.2012

Room Mailand
Chemical Sensors based on III-V Semiconductors
Chair: Udo Weimar

13:30
8.1.1
InGaN/GaN nanowire based opto-chemical sensor for detecting hydrogen and hydrocarbons at low temperature

G. Müller, EADS Innovation Works, Munich, Germany

13:50
8.1.2
Recording of living cell membrane depolarisation with AlGaN/GaN sensor

A.Podolska, The University of Western Australia, Crawley, Australia

14:10
8.1.3
Influence of oxygen impurities on the CO/H_2 selectivity of GaN based gas sensors

R. Prasad, Technische Universität Darmstadt, Darmstadt, Germany

14:30
8.1.4
Optical approach for gas detection using III-N nanowires

J. Teubert, Justus-Liebig-Universität Gießen, Gießen, Germany

14:50
8.1.5
Nitrate-selective gallium nitride transistor-based ion sensors with low detection limit

A. Podolska, The University of Western Australia, Crawley, Australia

15:10
8.1.6
Opto-chemical sensor system based on InGaN/GaN quantum dots for pH detection

S. Paul, EADS Innovation Works, Munich, Germany

Room München 1
Electrochemical Sensors II
Chair: Rod Jones

13:30
8.2.1
Ionic liquid based electrochemical ethylene sensor for fruit and vegetable monitoring

W. Knoben, Holst Centre/imec the Netherlands, AE Eindhoven, Netherlands

13:50
8.2.2
A high spatial resolution MEA for voltammetric analysis of trace metals in water pollution based on partial least squares regression

H.X. Zhao, Zhejiang University, Hangzhou, China

14:10
8.2.3 Invited
All Solid State Reference Electrodes

Agata Michalska, University of Warszawa, Warszawa, Poland

14:40
CANCELLED

15:00
8.2.5
Detection of Zn^{2+} ions using a novel chemosensor based on coumarin Schiff-base derivatives by electrochemical and fluorescence spectroscopy

B.B. Narakathu, Western Michigan University, Kalamazoo, USA

Room Brüssel
Metal Oxide-based Gas Sensors VIII
Chair: Nicolae Barsan

13:30
8.3.1
Highly sensitive VOC sensors using NiO-decorated ZnO nanowire networks: the effect of radial p-n junction

H.-S. Woo, Korea University, Seoul, Korea

13:50
8.3.2
Enhanced sensing performance of noxious H_2S sensor based on flame-spray-made electroactived-Cu/SnO_2 nanoparticles

Ch. Liewhiran, Chiang Mai University, Chiang Mai, Thailand

14:10
8.3.3
UV assisted chemical gas sensing of nanoporous TiO_2 at low temperature

X. Li, Hainan University, Hainan, China

14:30
8.3.4
Improved response characteristics of SnO_2 film based NO_2 gas sensor with nanoscaled metal oxide catalysts

A. Sharma, University of Delhi, Delhi, India

14:50
8.3.5 Invited
Gas sensitivity of different metal oxide nanostructured thin films

Alberto Lamagna, Grupo MEMS Comisión Nacional de Energia Atómica, Buenos Aires, Argentina

Room München 2
Nanowire-based Sensors
Chair: Juan Ramon Morante

13:30
8.4.1 Invited
Hybrid nanofabrication for multifunctional nanowire sensor applications

Inkyu Park, Korea Advanced Institute of Science and Technology (KAIST), Daejon, Korea

14:00
8.4.2
Gas sensing properties of novel CuO nanowire devices

S. Steinhauer, AIT Austrian Institute of Technology GmbH, Vienna, Austria

14:20
8.4.3
Nanowire based metal-oxide gas sensors using a novel micro-CVD technology

T. Fischer, University of Cologne, Cologne, Germany

14:40
8.4.4
Enhanced H_2S sensing properties of porous SnO_2 nanofibers modified with CuO

X. He, Chinese Academy of Sciences, Beijing, China

15:00
8.4.5
Enhancement of gas sensing properties by functionalization of networked SnO_2 nanowires with metal nanoparticles

S. Kim, Inha University, Incheon, Korea

Room Athen
Optical Absorbance-based Gas Sensors
Chair: Anna Grazia Mignani

13:30
8.5.1
High-order mesoporous (HOM) sensors for visual removal and recognition of toxic metal ions from drinking water

S. El-Safty, National Institute for Materials Science, Ibaraki, Japan

13:50
8.5.2
Anomalous gasochromic response behavior in hydrogen sensing with Pt/ WO_3 film at low temperature range

S. Okazaki, Yokohama National University, Yokohama, Japan

14:10
8.5.3
Colorimetric CO and NO_2 gas sensors for fire detection

C. Peter, Fraunhofer IPM, Freiburg, Germany

14:30
8.5.4
Fabrication and characterization of MEMS based optical hydrogen sensors

K. Kim, University of Ulsan, Ulsan, Republic of Korea

14:50
8.5.5
Au nanoparticles dispersed inside porous TiO_2 thin films: high performance optical gas sensors through localized surface plasmon resonance monitoring

A. Martucci, Università di Padova, Settore Materiali, Italy

15:10
8.5.6
Graphene photo detector with integrated waveguide biochemical sensors

T. Hwang, Sungkyunkwan University, Suwon, Korea

15:30 - 16:00 Room Brüssel - Fairwell Session - Chair: Ralf Moos